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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/765,229      | 01/18/2001  | Koujirou Sekine      | 15162/03060         | 7378             |

24367 7590 12/18/2002

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EXAMINER

STAHL, MICHAEL J

ART UNIT PAPER NUMBER

2874

DATE MAILED: 12/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/765,229

Applicant(s)

SEKINE ET AL.

Examiner

Mike Stahl

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☒ Claim(s) 1-3,5-10 and 14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 January 2001 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3,5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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***Priority***

1. Applicant's foreign priority claim is acknowledged. The certified copies of the foreign applications are of record in the file.

***Information Disclosure Statement***

2. The documents submitted January 18 and May 11, 2001 have been considered. Initialed copies of form PTO-1449 are attached.

***Claim Objections***

3. Claim 14 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 13. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claims 1-3 and 5-10 are objected to for being readily anticipated by a document in the Information Disclosure Statement which was submitted at the time these claims were filed.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3 and 5-10 are rejected under 35 U.S.C. 102(a) as being anticipated by Koops et al. (US 5973823).

Koops discloses a structure (fig. 1) having a two-dimensional periodic refractive index variation. The periodic structure is embedded within a waveguide, in other words, there is a waveguide which extends from each side of it (col. 4 lines 19-20). The periodic structure is variable by application of a voltage  $U_s$ . In one embodiment the periodic structure may comprise liquid crystal (col. 3 lines 10-13; claim 6). Thus the Koops device meets all the limitations of claims 1-3 and 5-10.

6. Claims 1 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Hatori (US 4900113).

Hatori discloses a device having a variable periodic index variation induced by elastic waves (see e.g. fig. 1). The frequency of the elastic waves is varied by a sweeper 20. The Hatori device therefore satisfies claims 1 and 4.

7. Claims 1-2 and 6-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Utaka et al. (US 4743087).

Utaka discloses an integrated optical device (fig. 6) including a light source portion with a variable emitted wavelength (DFB laser comprising elements 1-9 in the left-hand portion of the figure), a waveguide section to the right of the light source portion, and a variable periodic structure (grating 12) between the ends of the waveguide section. The periodic structure is

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varied by application of a voltage via electrode **14**. Thus the Utaka device meets the requirements of claims 1-2 and 6-15.

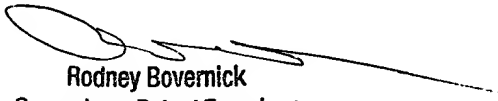
***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 3970959 discloses two-dimensionally periodic index devices. US 3843231, US 4039249, and US 5115344 disclose electrooptically variable gratings. US 4286232 describes a variable grating integrated with a variable wavelength light source. US 5781677 discloses a magnetically tunable grating. US 6175671, US 6278105, and US 6310991 describe variable photonic crystal structures.

9. Any inquiry concerning this communication should be directed to Mike Stahl at (703) 305-1520. Official communications eligible for submission by facsimile may be faxed to (703) 308-7724 or (703) 308-7722. Inquiries of a general or clerical nature (e.g., a request for a missing form or paper, etc.) should be directed to the Technology Center 2800 receptionist at (703) 308-0956 or to the technical support staff supervisor at (703) 308-3072.

MJS

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December 6, 2002